



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Marsh W. White Award Proposal

Project Proposal Title	A Visit to St. Jude Children's Research Hospital's Target House
Name of School	Rhodes College
SPS Chapter Number	5940
Total Amount Requested	\$300.00

Abstract

The Rhodes College Society of Physics Students will begin working with [St. Jude Children's Research Hospital](#). We will bring our demonstrations and ourselves to [Target House](#), the hospital's housing for patients undergoing long-term treatment, to perform outreach for their patients there.

Proposal Statement

Overview of Proposed Project/Activity/Event

- *Brief description*

This outreach event at St. Jude's Target House will be the first of (hopefully) many such events. We plan to bring approximately 8 demonstrations to the facility, with 10-15 volunteers, and hold a 1-2 hour event at which patients can freely pass between stations and interact with fun physics demos. Our volunteers will have explanations of their respective demonstrations ready, with varying levels of detail for different age groups.

- *Goals of the project*

- Patients at St. Jude will enjoy watching a physics show
- SPS will help Target House administration sculpt a fun-and-educational event for their patients
- Volunteers will perform outreach at a location other than a school
- Hopefully, this will become a regular outreach event (with frequency being up to St. Jude)

- *Intended audience*

- Target House accommodates 98 families at a time
- These ages range from babies to teenagers
- Patients come from all over Memphis, and thus will have varied levels of understanding

- *Motivation*

St Jude Children's Research Hospital is notable because of its commitment not only to the eradication of cancer, but also to the wellbeing of their patients during the trying duration of their treatment. A simple walk through the halls of the hospital will make this abundantly clear; everything, from fMRI facilities to dining halls, is made to be much less drearily medical than a usual hospital.

Target House is no exception to the hospital's devotion to its patients. The House, staffed by volunteers, is St Jude Children's Research Hospital attempt at making its patients feel comfortable. It features libraries of books and movies, a music room, an arts and crafts room, and workout facilities. Rhodes SPS is looking to contribute to the environment of these patients.

We have one previous experience volunteering at the House. In fall of 2014, Rhodes SPS was invited to take part in the Halloween festivities at Target House. We brought with us some demonstrations, and our "treats" for the night were spectra goggles. The kids loved it, and we were inspired to do more for that group of people. Science adds beauty to our world. We would love if we could bring that to the kids of Target House.

How Proposed Activity Promotes Interest in Physics

While most outreach is understandably focused on academic environments, we have (as mentioned in Background) recently held a very successful event at the Target House, and we would like that to continue. The children/young adults who have had an interruption in their education still deserve to learn in a way that's enjoyable and memorable, and that's what we plan to deliver.

Our outreach at Target House will be in the form of a stations. For the first run, we will not theme the event, but will instead bring some of our outreach "staples" [*see Plan*]. This will serve to (a) pique interest in physics and science; (b) allow us to explain basic physical concepts with visual

demonstrations; (c) show the audience that physics is not just doing math; and (d) give the patients of the Target House a chance to have fun and/or learn in a way that would be otherwise unavailable to them.

After our first run, we will attempt to “theme” the following events. Ideas that have been suggested are: Electromagnetism, Light and Its Uses, Things That Spin, Sound and Vibration, and How Physics Benefits Medicine. While we need to work with St. Jude to be sure each demo is okay by them, we’re confident that any of these categories would have enough demonstrations to make an interesting event.

Plan for Carrying Out Proposed Project/Activity/Event

- *Personnel*
 - Rhodes SPS Outreach Officer **Edoardo Draetta** will spearhead the event
 - Freshmen **Phoebe Sharp** and **Eleanor Hook** will work directly with Edo as co-heads
 - Both Phoebe and Eleanor were present at the first Target House event on Halloween, and as such are invaluable in facilitating further events
 - Phoebe is a regular volunteer at Target House, and was the proponent of our first interaction with them
 - All SPS officers will be available to fully support the event as needed
 - Volunteers will come from the SPS chapter and physics department proper
 - Nearly all SPS members have some kind of outreach experience
 - Faculty are available to test explanations on, to ensure scientific accuracy
 - University of Memphis and University of Mississippi (Ole Miss) will be invited as well
 - We have had several successful collaborations with both schools
 - In total: approximately 10-15 volunteers is optimal
- *Marketing*
 - Target House will be handling publicizing the event to the patients
 - Depending on our success at the Target House, we may look into offering our services to other departments of the hospital
 - If so, we will use Rhodes' many connections with the hospital to directly contact individuals who may be interested
- *SPS member participation*
 - All SPS members will be invited to volunteer
 - As stated, 10-15 total is the ideal number
 - We also invite students from Math, Biology and Chemistry to help us
 - This year we plan to expand our invitation to Computer Science
 - Any SPS members with extensive experience with outreach will be *strongly* encouraged to participate in the event
 - The other individuals who went to Target House on Halloween, for example
- *Expertise*
 - Phoebe and Eleanor are both extremely buoyant individuals who have already given stellar performances at Target House
 - Edo, as Outreach Officer, knows all of our demos backwards and forwards, and as such is an invaluable resource for what we can/should bring
 - **Mark Sellers**, a senior, has been doing outreach since freshmen year and helped create the SPS SOCK this summer as one of the SPS interns

Project/Activity/Event Timeline

- Contact Target House **December/Early January** for first event on January 31st
 - Schedule return visits a month in advance
- Have a full list of volunteers **three weeks before** (including drivers)
- Each demonstration operator will submit a list of materials **two weeks before**
- Have each demonstration operator explain their demonstration to a professor concisely and explicitly **10 days in advance**
- Acquire materials needed (excluding perishable goods like Dry Ice) **10 days in advance**
- Dry Run **Thursday and/or Friday before event**
- **January 31st**: Go to Target House and blow their socks off!

Event itself:

- Will last **approximately 2 hours**, most likely in the afternoon
- Arrive an hour beforehand to set up area
- Audience will rotate freely between stations

Demonstrations:

- Van der Graaf generator
- [Oobleck](#) to play with (and to make dance over a speaker)
- [Singing bowl](#)
- [Euler's disk](#)
- Ferrofluid "[sculpting](#)"
- Diffraction glasses with different kinds of lightbulbs to compare spectra
- Standing wave on a string
- [Proposed] [double pendulum](#)

Activity Evaluation Plan

After much discussion, we have decided that effective parameters for deciding the "success" of the event are:

- **Engagement**; do patients (and families) smile? Do they ask questions? Do they stay at stations of their own accord?
- **Effective explanations**; do audience members of all ages (>6) understand at least the basic principles behind the demos?
- **Reaction of St. Jude**; will we be asked to return? Can we hold an event with no intervention or aid from employees?
- **Well-prepared**; will our event go off without any last-minute scrambling?

We also plan to have at least one member whose sole job is to take photos and videos, both for archival purposes and to re-watch and learn from.

Budget Justification

While most demonstrations are already in our possession, we have recently been talking a lot about how impressive a double pendulum would be, to demonstrate chaotic motion as well as to grab attention from audience members passing by. We know we can build one cheaply (see: budget), and having that for our first event at Target House would be a boon to our show.

We're requesting decorations, lab coats, etc. because our outreach often feels lacking in presentation. This event is a chance for us to try and go beyond "good" outreach to do some "excellent" outreach. This is a follow-up to our attempt to appear more cohesive at our annual Pumpkin Drop event. Wearing costumes and decorating our stations made the entire event feel more organized, and that's the atmosphere we want to create at Target House. If we start expecting such a level of involvement from our volunteers (and have the props to provide them!), it is our opinion that the quality of our outreach can only improve.